



National Agromet Advisory Service Bulletin

Friday 17th November 2017
(For the period 17th to 22nd November 2017)



Issued by
India Meteorological Department

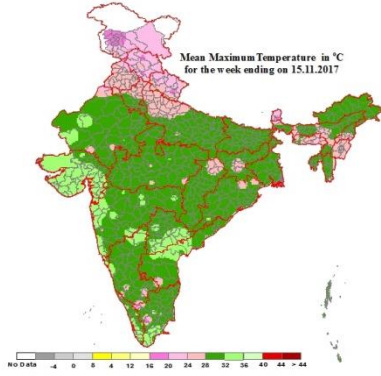
Weblink For

District AAS Bulletin: <http://www.imdagrimet.gov.in/node/3545>

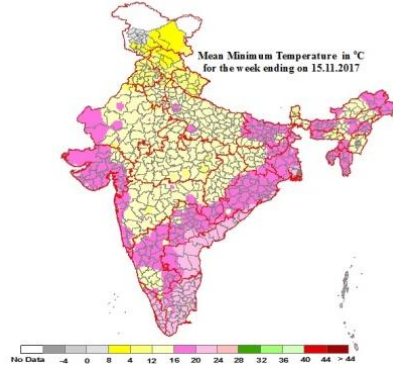
State Composite AAS Bulletin: <http://www.imdagrimet.gov.in/node/3544>

Spatial distribution of weather parameters for the week ending 15.11.2017

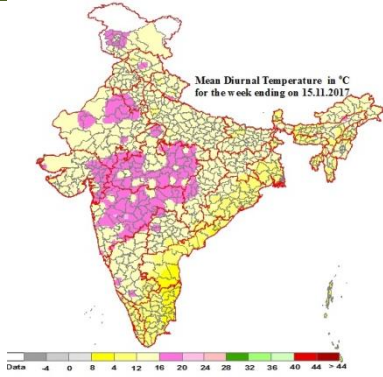
Mean Maximum Temperature (°C) for the week ending 15.11.2017



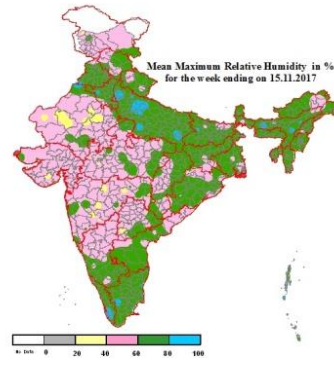
Mean Minimum Temperature (°C) for the week ending 15.11.2017



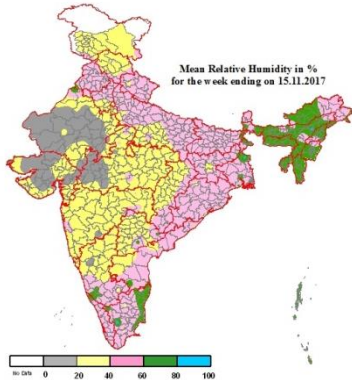
Mean Diurnal Temperature Variation (°C) for the week ending 15.11.2017



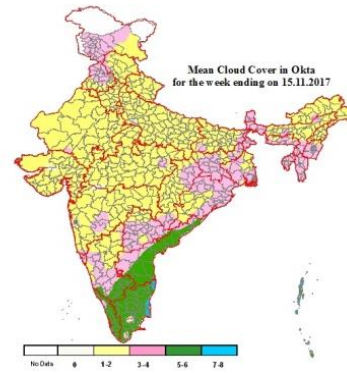
Mean Maximum Relative Humidity (%) for the week ending 15.11.2017



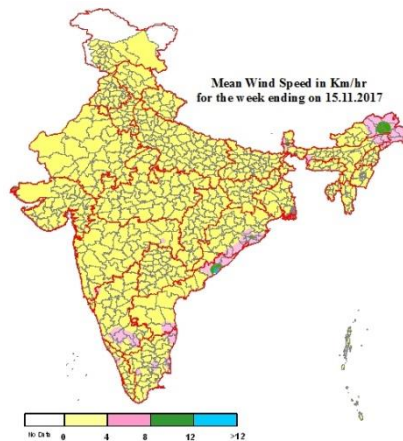
Mean Minimum Relative Humidity (%) for the week ending 15.11.2017



Mean Cloud Cover (okta) for the week ending 15.11.2017

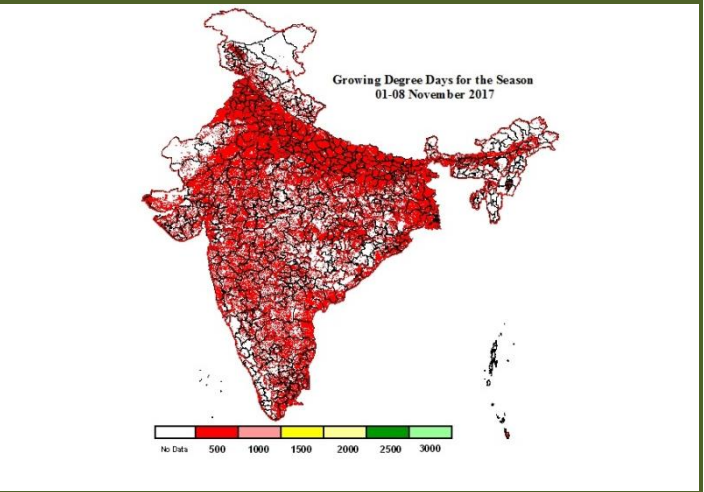
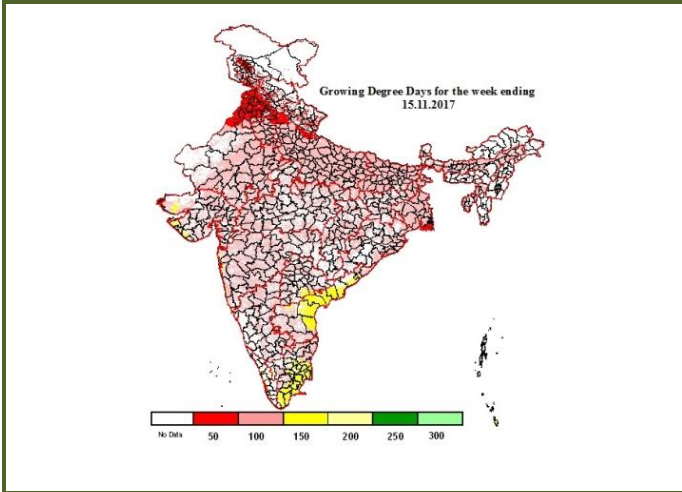


Mean Wind Speed (km/hr) for the week ending 15.11.2017



Growing Degree Days for the week ending 15.11.2017

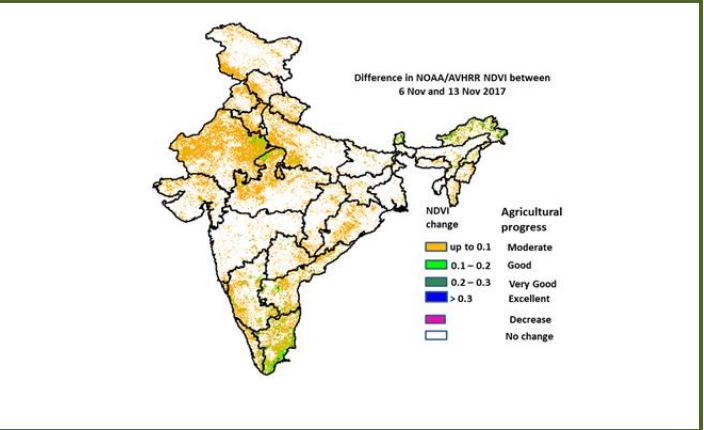
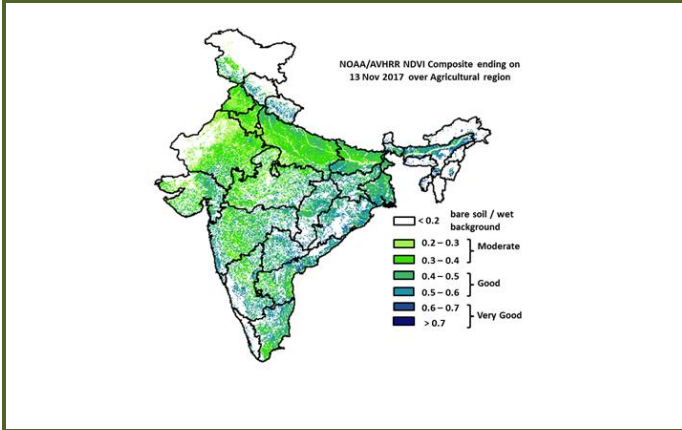
Growing Degree Days for the season 01.11.2017 to 15.11.2017



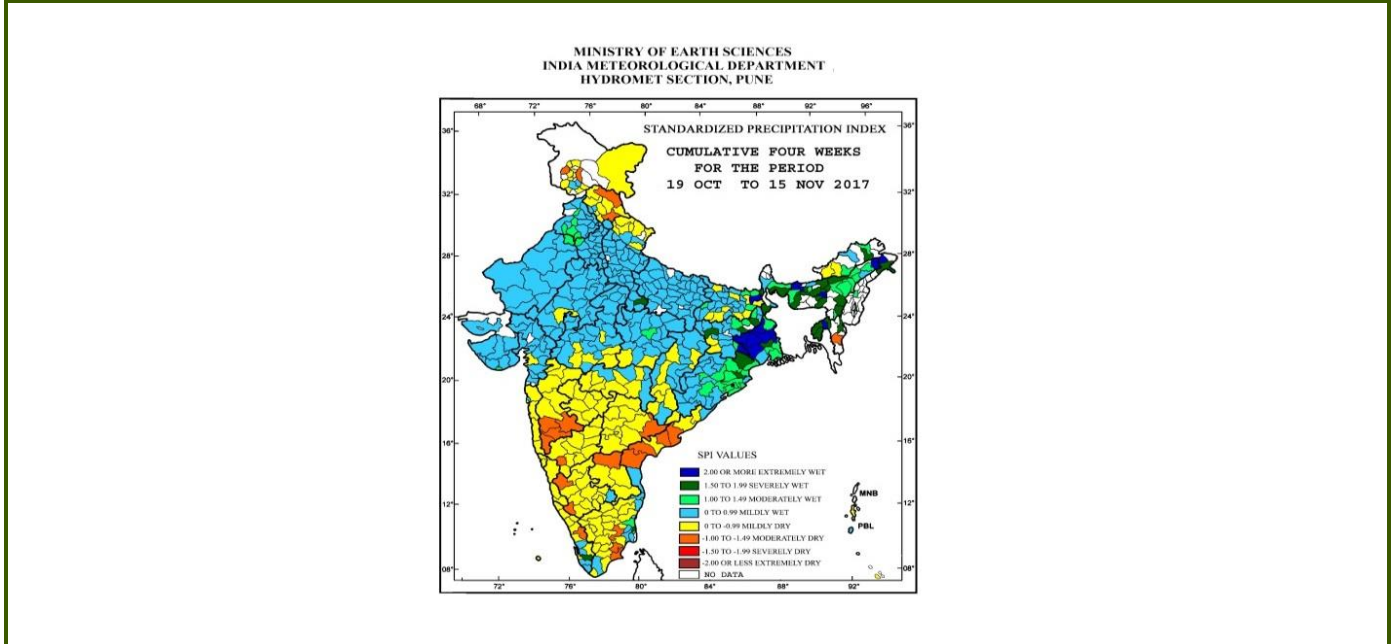
* Base temperature for *Rabi*Season is taken as 05⁰ C

NOAA/AVHRR NDVI composite ending on 13th November 2017 over Agricultural regions of India

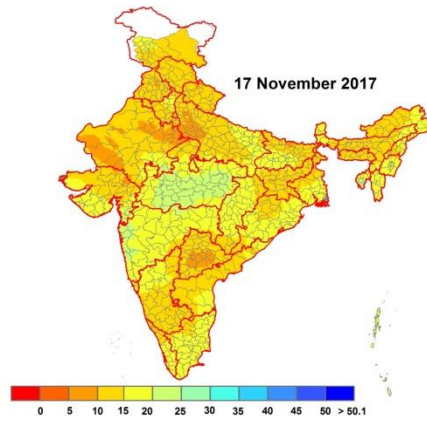
Difference in NOAA/AVHRR NDVI between 6th November and 13th November 2017



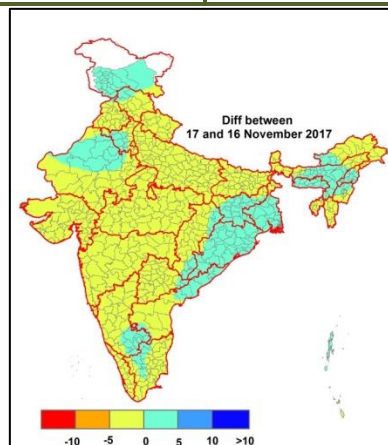
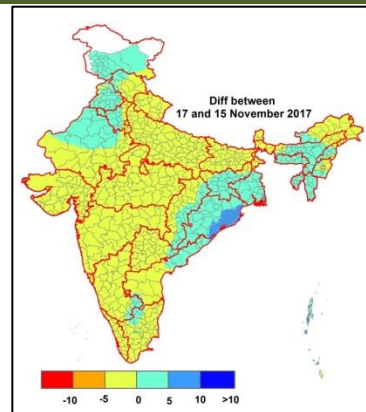
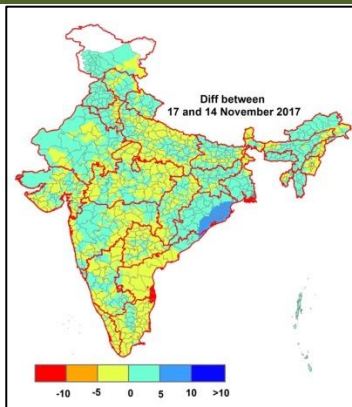
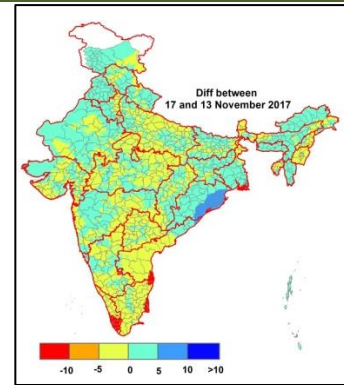
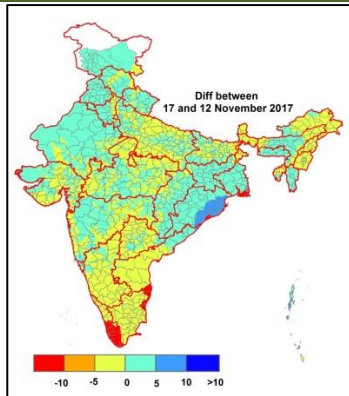
**Standardised Precipitation Index
Cumulative 4 weeks for the period 19th October to 15th November 2017**



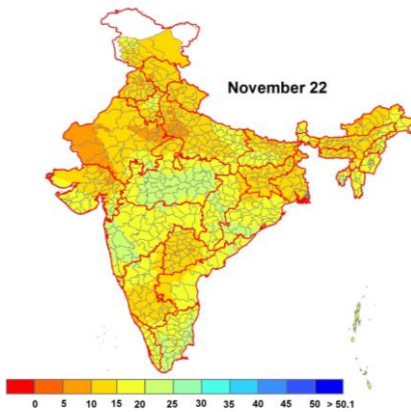
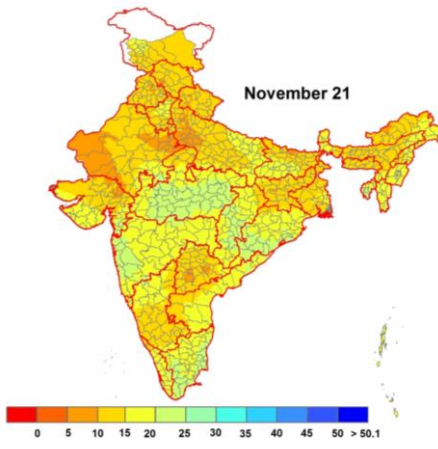
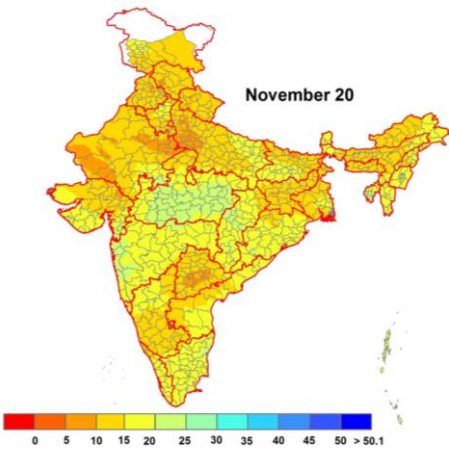
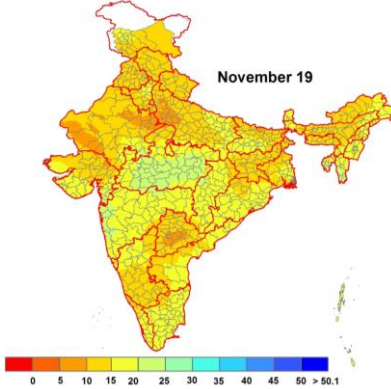
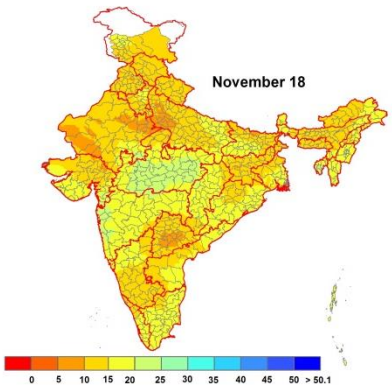
Daily Soil Moisture (mm) for 17th November 2017 (ending at 0830 IST) for 60 cm depth



Difference of Soil Moisture (mm) for 60 cm depth



**Forecasted Soil Moisture (mm) from 18th November to 22nd November 2017 (ending at 0830 IST)
for 60 cm depth**



Weather Forecast for next 5 days valid upto 0830 hours of 22nd November 2017

- Meteorological subdivision wise detailed of 5 days rainfall forecast is given in Table.
- No significant change in minimum temperatures very likely over Northwest & adjoining Central India during next 24 hours and fall by 2-4°C over Northwest India & by 2-3°C over adjoining parts of Central India thereafter.
- **Shallow to moderate fog** at isolated places in the morning hours very likely over Punjab, northwest Haryana, north Rajasthan and Nagaland, Manipur, Mizoram & Tripura during next 3 days, Bihar, Arunachal Pradesh and Assam & Meghalaya from 18th November.

5 Day Rainfall Forecast (Mid day) 17th November 2017

Met-Sub-Division	17 Nov	18 Nov	19 Nov	20 Nov	21 Nov
1. Andaman & Nicobar Islands	SCT	SCT	SCT	SCT	FWS
2. Arunachal Pradesh	DRY	DRY	ISOL	ISOL	ISOL
3. Assam & Meghalaya	ISOL	ISOL	ISOL	ISOL	ISOL
4. N. M. M. & T.	SCT	ISOL	ISOL	ISOL	ISOL
5. S.H. West Bengal & Sikkim	ISOL	DRY	DRY	DRY	DRY
6. Gangetic West Bengal	FWS	SCT	ISOL	ISOL	DRY
7. Orissa	FWS	ISOL	SCT	SCT	ISOL
8. Jharkhand	SCT	ISOL	ISOL	DRY	DRY
9. Bihar	ISOL	ISOL	DRY	DRY	DRY
10. East Uttar Pradesh	ISOL	ISOL	DRY	DRY	DRY
11. West Uttar Pradesh	DRY	DRY	DRY	DRY	DRY
12. Uttarakhand	DRY	ISOL	ISOL	DRY	DRY
13. Haryana, Chd & Delhi	ISOL	ISOL	DRY	DRY	DRY
14. Punjab	ISOL	ISOL	DRY	DRY	DRY
15. Himachal Pradesh	ISOL	SCT	ISOL	DRY	DRY
16. Jammu & Kashmir	SCT	SCT	ISOL	DRY	DRY
17. West Rajasthan	ISOL	ISOL	DRY	DRY	DRY
18. East Rajasthan	ISOL	ISOL	DRY	DRY	DRY
19. West Madhya Pradesh	DRY	DRY	DRY	DRY	DRY
20. East Madhya Pradesh	ISOL	ISOL	DRY	DRY	DRY
21. Gujrat Region	DRY	DRY	DRY	DRY	DRY
22. Saurashtra & Kutch	DRY	DRY	DRY	DRY	DRY
23. Konkan & Goa	DRY	DRY	ISOL	ISOL	ISOL
24. Madhya Maharashtra	DRY	DRY	ISOL	ISOL	ISOL
25. Marathawada	DRY	DRY	ISOL	ISOL	ISOL
26. Vidharbha	DRY	ISOL	ISOL	ISOL	ISOL
27. Chhattisgarh	ISOL	ISOL	ISOL	ISOL	ISOL
28. Coastal Andhra Pradesh	ISOL	ISOL	ISOL	ISOL	ISOL
29. Telangana	DRY	ISOL	SCT	ISOL	ISOL
30. Rayalaseema	ISOL	ISOL	ISOL	ISOL	ISOL
31. Tamilnadu & Puducherry	SCT	ISOL	SCT	ISOL	ISOL
32. Coastal Karnataka	ISOL	ISOL	SCT	SCT	SCT
33. North Interior Karnataka	DRY	ISOL	SCT	SCT	ISOL
34. South Interior Karnataka	ISOL	ISOL	SCT	SCT	SCT
35. Kerala	ISOL	ISOL	SCT	SCT	SCT
36. Lakshadweep	DRY	DRY	DRY	ISOL	SCT

% Stations	Category	% Stations	Category
76-100	Widespread (WS/ Many Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)
No Rain	Dry		

Weather Warning during next 5 days

- **17 November (Day 1): Heavy rain** at isolated places very likely over north coastal Odisha, coastal Gangetic West Bengal and Tamilnadu.
Squally winds speed reaching 40-50 kmph gusting to 60 kmph very likely to prevail along & off Odisha and West Bengal coasts during next 12 hours.
- **18 November (Day 2):** No weather warning.
- **19 November (Day 3):** No weather warning.
- **20 November (Day 4):** No weather warning.
- **21 November (Day 5):** No weather warning.

Weather Outlook for subsequent 2 days from 22nd to 24th November 2017

- Rain at a few places likely over southern peninsular India and Andaman & Nicobar islands.
- Weather is likely to be dry over the remaining parts of the country.

Salient Advisories

- The depression over northwest Bay of Bengal off south Odisha coast moved northeastwards with a speed of 15 kmph during past 6 hours and lay centered at 0830 hours IST of today, the 17th November, 2017 over northwest Bay of Bengal off Odisha coast near latitude 19.5°N and longitude 86.3°E, about 70 km south of Paradip, 180 km eastnortheast of Gopalpur and 250 km southsouthwest of Digha. The system is very likely to move northeastwards off Odisha coast and weaken gradually into a well marked low pressure area during next 12 hours.
- As rain is likely at many places with **heavy rain** at isolated places very likely over north coastal Odisha and coastal Gangetic West Bengal on 17th November and also **heavy rain** at isolated places very likely over Tamilnadu on 17th November, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation.
- In the Problem Area Zone of Kerala, undertake wet sowing of rice after seed treatment with Pseudomonas.
- In the Western Zone of Tamil Nadu, undertake sowing for bengal gram under rain fed situation considering the available soil moisture
- As shallow to moderate fog at isolated places in the morning hours very likely over Punjab, northwest Haryana, north Rajasthan and Nagaland, Manipur, Mizoram & Tripura during next 3 days, Bihar, Arunachal Pradesh and Assam & Meghalaya from 18th November. , monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.
- Under the prevailing weather conditions, land preparation/sowing of following *rabi* crops are advised in different States/Agroclimatic Zones as given below:
 - **Wheat:**Continue land preparation and sowing in Punjab, Haryana, Delhi, in Bhal and Coastal Zone of Gujarat, in Irrigated North Western Plain Zone, in Southern Plain Zone and in Sub Humid Southern Plain and Aravali Hill Zone of Rajasthan,in Jammu & Kashmir, South Interior Karnataka, Madhya Maharashtra, Marathwada and Madhya Pradesh under sufficient soil moisture condition. As rain/snow is likely at a few places over Jammu and Kashmir and Himachal Pradesh during next 48 hours, care may be taken for decision in sowing.
 - **Bengal gram:** Continue sowing of gram in Madhya Maharashtra, Marathwada, Vidarbha, Jharkhand, Madhya Pradesh, Chhattisgarh.Rayalseema, Telangana, Rajasthan (Western Plain Zone) and Punjab. Continue sowing in Jharkhand, Madhya Pradesh and Chhattisgarh. Complete sowing of gram in Madhya Maharashtra, Marathwada and Vidarbha
- As dry/mainly dry weather would prevail, continue harvesting of matured rice, pulses and cotton in Punjab.
- Continue harvesting of kharif rice in Bihar and Jharkhand in clear weather and continue harvesting of matured rice in Odisha after current spells of rain. Keep harvested produce in safer places.

Detailed Zonewise Agromet Advisories

SOUTH INDIA [TAMIL NADU, TELANGANA, ANDHRA PRADESH, KARNATAKA, KERALA]

- **Realised Rainfall:** Rainfall occurred in all districts of Kerala except Cannur, Kasaragod, Kozhikode, Palakkad, Thrissur and Wynad; in Ariyalur, Chennai, Cuddalore, Kancheepuram, Karaikal, Nagapattinam, Perambalur, Puducherry, Salem, Thanjavur, Tirunelveli, Tiruvallur, Tiruvarur and Villupuram districts of Tamil Nadu and in Nellore district of Coastal Andhra Pradesh during the week. Weather remained mainly dry over rest of the region.
- **Advisories:**
 - As heavy rain at isolated places very likely over Tamilnadu on 17th November, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation.

▪ **Kerala:**

- In the Problem Area Zone, undertake wet sowing of rice after seed treatment with *Pseudomonas* and continue harvesting of Nendran bananas.
- In the Northern Zone, continue sowing of cow pea, transplanting of rice and harvesting of all matured crops.
- In the High Altitude Zone, continue planting of polybag coffee seedlings, cultivation of short duration vegetable crops like amaranthus, cow pea etc. in the interspaces of newly planted banana crop and harvesting of green ginger and cardamom.
- In the Central Zone, prevailing weather condition is congenial for occurrence of leaf folder and stem borer in mundakan rice (second crop). To control, place two cc *Trichogramma* cards cut into 10 pieces under leaf in different corners of the field.

▪ **Andhra Pradesh:**

- In the North Coastal Zone, continue harvesting of matured rice in clear weather.
- In the Krishna Godavari Zone, continue land preparation for sowing of Bengal gram.
- In the Scarce Rainfall Zone, continue sowing of groundnut under assured irrigated conditions. Complete harvesting of matured groundnut crop(kharif) at the earliest.
- In the Southern Zone, remove standing water from horticultural crop fields and cover the matured fruit bunches with banana leaves and harvest within two weeks. To control damping of rhizomes, spray Copper Oxchloride @ 3 g/litre of water. In Nellore district, remove excess water stagnated in rice nurseries and main fields and apply 1 kg each of Nitrogen, P₂O₅ and K before sowing the seed. In Kadapa district, continue sowing of Bengal gram in heavy soils and jowar, sunflower and fodder crops in paddy cultivated areas, if sufficient sowing moisture is available.
- In the High Altitude Tribal Zone, continue sowing of mustard and cabbage and harvesting of paddy.
- In the Scarce Rainfall Zone, incidence of fusarium wilt is observed in rabi Bengal gram. To avoid further spread of fusarium wilt, drench with Bavistin @2 g/litre of water.

▪ **Telangana:**

- In North Telangana Zone, continue harvesting of kharif rice, land preparation for sowing of rabi rice, groundnut and rabi sorghum.
- In South Telangana Zone, undertake nursery sowing of rice.
- In South Telangana Zone, prevailing weather conditions are congenial for increase in blast (leaf, neck and spikelet) disease in rice. To control, spray Isoprothiolane @ 1.5 ml or Kasugamycin @ 2.5 ml or Tricyclozole @ 0.5 g per litre of water twice at 7-10 days interval.

▪ **Tamil Nadu:**

- In the Cauvery Delta Zone, provide adequate drainage facilities to drain the excess rainwater present in the paddy fields to improve better aeration in the root zone.
- In the North Eastern Zone, excess water in the paddy field and other crops should be drained out. Safe guard the harvested food grains in damp proof areas to avoid spoilage.
- In the Western Zone, undertake sowing for bengal gram under rain fed situation considering the available soil moisture. Detrashing and double line propping may be done to the late season sugarcane crop to avoid lodging due to moisture and light wind. Garden land banana may be planted utilizing the realized rainfall.
- In the Cauvery Delta Zone, sheath blight incidence is noticed in the samba rice due to prevailing weather condition, spray Propiconazole @ 1 ml/litre of water on a non-rainy day.
- In the South Zone, moderate to high cloud cover and high humidity is congenial for leaf hopper incidence in cotton. To control, spray Imidacloprid 200 SL@ 100 ml/ha on non-rainy days.
- In the High Altitude Hilly Zone, drainage facilities should be created in the field to drain off excess water. To control bulb rot disease in garlic crop, soil drenching with Copper oxy chloride @ 1 g/litre of water can be done.
- In the North Western Zone, to avoid flower drops in cotton crop due to continuous rainfall, farmers are advised to spray "Cotton plus" @ 0.25 kg/acre during flowering or fruiting stages.
- In the High Rainfall Zone, combined application of systemic and contact fungicides may be taken for banana as a prophylactic measure to restrict the disease spread. Since there is no rainfall, mulching and irrigation should be given for nursery crops, pepper and other young fruit planting materials. Grafting and cutting of horticultural crops may be taken. Irrigate the paddy field to a depth of 5 cm after disappearance of ponded water.
- In Coastal Zone and Hill Zone, complete harvesting /threshing matured rice in clear weather.
- In North Transition Zone, continue sowing of chickpea (Annigeri-1, BG-1105, BGD-103, JG-11and BGS-964). Undertake intercultural operations in sorghum crop. Complete harvesting of matured groundnut, soybean and maize cobs.
- In Southern Transition Zone, continue harvesting of matured maize cobs and arecanut.
- In Central Dry Zone, continue sowing of Bengal gram crop. Complete harvesting of matured groundnut and matured cobs of maize.

▪ **Karnataka**

- In Coastal Zone and Hill Zone, complete harvesting /threshing matured rice in clear weather.
- In North East Dry Zone, undertake planting of sugarcane by taking 9 months old sugarcane setts, harvesting of

- paddy and continue first picking of early sown cotton.
- In North East Transition Zone, continue plantation of sugarcane (variety Co-86032) crop.
- In North Dry Zone, in medium black soils, continue sowing of chickpea (A-1, GBS-964, JG-11, JG-11, BGD-103, GB-1105) and wheat under irrigated condition.
- In North Transition Zone, continue sowing of chickpea (Annigeri-1, BG-1105, BGD-103, JG-11 and BGS-964). Undertake intercultural operations in sorghum crop. Complete harvesting of matured groundnut, soybean and maize cobs.
- In Southern Transition Zone, continue harvesting of matured maize cobs and arecanut.
- In Central Dry Zone, continue sowing of Bengal gram crop. Complete harvesting of matured groundnut and matured cobs of maize.
- In Eastern Dry Zone, continue sowing of ragi (Indaf-9, GPU- 45 & 66, PR- 202), cowpea (KBC-1, TVX-944 and PKB-4 for vegetable purpose), sunflower (Morden, KBSH-1,41,44 & 52 and Niger (KBN-1, No-71) and in black soils - Bengal gram (Annigeri-1, J.J-11, KAK-2, Vishal), field bean (HA-1, 3, 4) under optimum moisture condition.
- In Southern Dry Zone, incidence of color rot disease is observed in pigeon pea (BRG 1 and BRG 2 varieties; to control, spray Bavistin @ 2gm/litre of water in clear weather.
- In North East Dry Zone, infestation of brown plant hopper is noticed in rice crop; to control, spray the crop with Chloropyriphos @2.0 ml or Monocrotophos @1.5 ml/litre of water in clear weather. In late sown cotton (boll development stage), infestation of myrid and mealy bugs is noticed; spray Monocrotophos @ 2 ml or Profenophos @ 2 ml/litre of water in clear weather.
- **Animal Husbandry**
- In the Problem Area Zone of Kerala, avoid moist conditions in cattle shed to prevent incidence of foot rot.
- In the Central Zone of Kerala, maintain cleanliness of the cattle shed, udder of the cow and also hands of the person who milking the cow.
- In the Cauvery Delta Zone of Tamil Nadu, to prevent the occurrence of Mastitis in milching animals, wash the udder and backside of the body with 1% Potassium permanganate solution before and after milking.
- In the Southern Zone of Tamil Nadu, prevailing weather conditions are congenial for incidence of black quarter disease in cow. Hyper immune serum (HIS) is used to control explosive outbreaks. Penicillin along with HIS is used to treat the disease.
- In North Dry Zone, vaccinate (ET vaccine) sheep and goats against Enterotoxemia. In Southern Dry Zone, maintain the optimum room temperature in sericulture, poultry and dairy unit.

NORTHEAST INDIA [ARUNACHAL PRADESH, NMM&T, ASSAM, MEGHALAYA]

- **Realised Rainfall:** Weather remained dry/mainly dry over the region during the week.
- **Advisories:**
 - As shallow to moderate fog at isolated places in the morning hours very likely over Nagaland, Manipur, Mizoram & Tripura during next 3 days, Arunachal Pradesh and Assam & Meghalaya from 18th November , monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.
 - **Assam & Meghalaya, Arunachal Pradesh:**
 - In Arunachal Pradesh, continue sowing of rabi vegetables, pea, carrot and pineapple. Continue land preparation for sowing of potato. Undertake transplanting of healthy seedlings of cabbage, cauliflower, knolkhol, etc. Undertake harvesting of okra, soybean and mature cobs of maize. Drain excess water from Sali rice field 7-10 days before harvesting.
 - In Meghalaya, continue sowing of seeds/transplanting of seedlings of cauliflower, broccoli and cabbage. Continue sowing of pea in high altitude. Continue land preparation and sowing of rapeseed and mustard. Harvest tender pods of French beans, rajmash and cow pea.
 - In the North Bank Plain Zone of Assam, continue harvesting of Sali rice. Undertake nursery bed preparation and sowing of Boro paddy varieties like Mahsuri, IR-50, Dinanath, Bishnuprasad, Jyotiprasad and Kanaklata. Continue land preparation and sowing of rapeseed and mustard. Carry out thinning and weeding after 15-20 days from sowing. Continue planting of early varieties of potato.
 - In Barak Valley Zone of Assam, continue land preparation for sowing of rapeseed and khesari and planting of potato
 - In Lower Bramhaputra Valley Zone of Assam, continue harvesting of Sali rice. Undertake sowing of lentil and tomato. Undertake seed-bed preparation for Boro rice. Continue sowing of buck wheat. Undertake land preparation for wheat so as to complete sowing by the end of November. Complete planting of potato by the end of this week.
 - In Upper Bramhaputra Valley Zone of Assam, undertake harvesting of Sali rice. Undertake seed bed preparation and sowing of Swarnabh, Dinanath, Kanaklata, Jyotiprasad, Bishnuprasad, etc. varieties of Boro rice. Continue planting of potato. Complete the sowing of linseed and lathyrus in the rice field as relay crop.
 - In the Central Brahmaputra Valley Zone, continue harvesting of mature Sali paddy. Undertake relay cropping with pea crop in the rice field. Continue nursery bed preparation and sowing of Boro rice. Undertake Sowing of improved

wheat varieties viz., Sonalika, DBW-14, HUW-468, UP-262 and K7416 within November to mid December. Continue land preparation for sowing of wheat, rabi pulses, oil seeds, rape seed and mustard. Thinning and weeding of already sown oilseed and pulse crops may be done within 15-21 days of sowing. Carry out harvesting of mature black gram and green gram. Remove dead and dry leaves of sugarcane and tie 4-5 canes together to prevent lodging.

- In Barak Valley Zone of Assam, apply 5% Malathion dust @ 20 kg per hectore of land against gundhi bug at milk stage in Sali rice.
- In the North Bank Plain Zone, spray Chlorpyrifos 20 EC or Dimethoate 30 EC @ 2 ml/litre of water if fly attack is observed in mustard and rapeseed crop.
- In Upper Brahmaputra Valley Zone of Assam, apply Trichogramma chilonis around 3-4 times @ 20,000 numbers per bigha, at an interval of 10 days to control shoot and fruit borer in brinjal. Spray Malathion 50 EC 1-1.5 lit. in 500-700lit of water (for 1 ha) for aphids in the green and black gram crop. Repeat the spray if necessary.
- **Nagaland, Mizoram, Manipur and Tripura:**
- In Manipur, continue harvesting of rice crop. Continue sowing of rapeseed/mustard, field pea, black gram and lentil when the field is slightly muddy. Continue land preparation/sowing of coriander and spinach. Continue transplanting of cabbage and cauliflower. Continue nursery raising of onion. Continue sowing of potato.
- In Nagaland, continue land preparation for sowing of toria and rabi maize. Undertake nursery preparation of vegetables like cabbage, cauliflower, knolkhol, broccoli, radish and tomato. Carry out weeding and earthing up operations in Naga King Chilli.
- **Animal Husbandry**
- In Hill Zone of Assam, immunize cattle against FMD, BQ, Enterotoxaemia and Hemorrhagic Septicemia.
- In the Barak Valley Zone of Assam, use lime powder as calcium source up to 2 kg per 100 kg of feed for Layer birds and provide them light during the night time to have more egg production.
- In the Central Brahmaputra Valley Zone, vaccinate cattle, goat and pigs against BQ, HS, Foot and mouth disease. Vaccinate poultry birds against Ranikhet disease.
- In Manipur, vaccinate and de-worm cattle, sheep, goat and pigs. Carry out shearing of sheep during this month. Protect animals/ birds from sudden drop in temperature by covering the walls with hessian cloth/ polythene sheet during night time.
- In Nagaland, protect birds from cold by putting curtains around the shed. Follow strict hygiene in the piggery and apply timely vaccination to pigs.
- **Fishery**
- In Barak Valley Zone of Assam, add 2 to 5% vitamin mineral mixture in fish feed for good growth and to strengthen immunity for disease resistance in fish.
- In the Central Brahmaputra Zone, Apply Potash @ 4-5 mg/lit of water, Sukrena WS @ 1 lit per bigha of water and lime in required doses to protect the fish population against various bacterial diseases prevalent in winter season.

WEST INDIA [GOA, MAHARASHTRA, GUJARAT]

- **Realised Rainfall:** Weather remained dry over the region during the week.
- **Advisories:**
- **Maharashtra:**
- Complete western Ghat Region of Madhya Maharashtra and harvesting of matured rice in East Vidarbha. Continue picking of fully opened cotton bolls in Madhya Maharashtra, Marathwada and Vidarbha.
- In Konkan, undertake land preparation for rabi rice. Undertake land preparation for sowing of rabi groundnut. Select any one variety for sowing from TG-26, TAG-24, TPG-41, Konkan Gaurav, Konkan Tapora. Incidence of Thrips may be observed on new mango flush, spray Spinosad @ 2.5 ml or Lambda Cyhalothrin @ 3 ml per 10 liters of water on the whole tree.
- In Marathwada, undertake late sowing of wheat by selecting varieties like NIAW-34, LOK-1, HI-8663, AKAW-381, AKAW-1071. For late sowing use seeds @ 125 kg / ha. To control attack of Helicoverpa armigera in gram, spray Quinalphos or Chlorpyrifos @ 20 ml per 10 liter of water. For control of aphids in safflower, spray Dimethoate @ 10 ml / 10 liter of water.
- In East Vidarbha, continue sowing of gram, wheat and linseed.
- **Gujarat:**
- In Bhal and Coastal Zone, continue sowing of chickpea, cumin, mustard, wheat and land preparation for sowing of fennel crop. Apply regular irrigation in castor.
- In South Saurashtra Zone, continue picking of matured clusters of castor and sowing of garlic, coriander, cumin crops. Complete land preparation for sowing of wheat; continue.
- In North West Zone of Gujarat, continue picking of matured bolls of cotton, sowing of mustard and nursery preparation of cabbage. Carry out intercultural operation in castor.
- In North Gujarat Zone, continue picking of matured bolls of cotton, land preparation for planting of potato, sowing of mustard, gram, wheat crops and nursery preparation for cabbage.

- In North Saurashtra Zone, continue sowing of wheat, cumin and coriander crops, gram (Gujarat Chana-2 (unirrigated), Gujarat Chana-3 (irrigated)), mustard (Varuna, Gujarat Rai-3), pea and carrot (for vegetable purpose), planting of garlic (Gujarat Garlic-5 or Local) and onion crops.
- In South Gujarat Heavy Rainfall Zone, continue sowing of *rabi* pulses like Indian bean, gram, green gram crops, offseason okra and complete nursery preparation of chilli and brinjal and threshing of rice.
- In South Gujarat Zone, continue sowing of wheat, gram crop and planting of sugarcane.
- In Middle Gujarat Zone, continue sowing of wheat (GW-496, GW-503, GW-273, GW-322). And sowing of maize (Ganga safed-2, GM-6).
- **Animal Husbandry**
- In Gujarat, keep cattle indoor at night time to protect from cold wind.

EAST INDIA [JHARKHAND, BIHAR, ODISHA, WEST BENGAL & SIKKIM, ANDAMAN & NICOBAR ISLANDS]

- **Realised Rainfall:** Rainfall occurred in all districts of Andaman & Nicobar Islands. Weather remained dry/mainly dry over rest of the region during the week.
- **Advisories:**
 - As rain is likely at many places with **heavy rain** at isolated places very likely over north coastal Odisha and coastal Gangetic West Bengal on 17th November, avoid intercultural operation and application of plant protection measures and fertilizers to the standing crops. Provide adequate drainage in standing crop fields to avoid water stagnation.
 - As shallow to moderate fog at isolated places in the morning hours very likely over Bihar from 18th November. , monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.
 - **Odisha:**
 - In North Eastern Ghat Zone, continue sowing of sesame after current spells of heavy rain.
 - In Mid Central Table Land Zone, continue nursery raising of cole crops and harvesting of groundnut in clear weather .
 - In North Central Plateau Zone, continue land preparation and sowing of mustard and sesame in fallow uplands.
 - In Western Undulating Zone, sugarcane crop is at (thirty seven to thirty eight week) grand growth stage. In the prevailing weather, there may be attack of Top shoot borer at this stage. Spray Triazophos/Profenophos 400ml per acre @ 2ml/lit of water. Scale insects and pyrilla may also infest the crop during this period. Spray Buprofezin 400ml/acre @ 2ml/litre of water.
 - **Bihar:**
 - In South Bihar Alluvial Zone, in the areas where paddy crop is about to mature, irrigation should be stopped two weeks before harvesting. Undertake harvesting of matured rice crop and it should be dried in the field for 2-3 days and thereafter threshing should be done. In present weather condition, field preparation should be started for rabi crops. Undertake transplanting of seedlings of cauliflower, cabbage and tomato may be done in raised bed. Recommended spacing should be maintained. Prepare the field for planting of potato. Sowing of carrot may be done in raised bed. Recommended cultivars: - Pusa Rudhira, Pusa Asita. Seed rate-4.0 kg/ acre.
 - In North East Alluvial Zone, continue field preparation and sowing of lentil, mustard, maize and pea. Continue planting of early variety of potato.
 - In North East Alluvial Zone, for control of shoot borer in sugarcane, spray Chlorpyrifos 20 EC @ 3ml/litre of water.
 - **Jharkhand:**
 - In South Eastern Plateau Zone, after harvesting of rice, undertake land preparation for sowing of mustard. Improved varieties of like – Pusa bold, Shivani, Varuna, Kranti, JD 6 and Sedge 2 etc.can be undertaken by treating the seed with Bavistin @ 2g per kg seed. Generally 3 kg seed for an acre land is sufficient by maintaing plant to plant 30 cm and row to row 10 cm distance.
 - In Western Plateau Zone, continue harvesting of matured rice. After harvesting of rice, farmers having at least 3-4 irrigation facility may undertake cultivation of wheat, potato and green pea and those who have only 2 - 3 irrigation facility may proceed for sowing of gram, toria and mustard. Farmers wishing to cultivate Rainfed wheat may select one of the recommended varieties like HDR- 77, K-8027, Birsa genhu – 3 etc. 50 kg seeds are required for cultivation in one acre. Before sowing seed should be treated with fungicide like Bavistin. Undertake land preparation and sowing of linseed and gram with recommended varieties (Linseed:Sweta, Shubhra, T-397 etc. Gram: B.G.-372, B.G.-256, K.W.R.-108, Pant G.-186, Pant G. –114 and for Kabuli gram are H.K.-94-134, B.G.-1053, B.G.-1003 etc)
 - In Central and North Eastern Plateau Zone, continue nursery bed preparation for tomato, cabbage, cauliflower and brinjal. Continue land preparation for sowing of mustard and pea and planting of potato.
 - **West Bengal:**
 - In Coastal Saline Zone, carry out harvesting of Aman rice after current spells of rain. Continue sowing mustard. Carry out field preparation for lentil varieties viz. Subrata, Asha, Maitri, etc. Keep the cabbage, cauliflower and

- tomato fields weed free, apply fertilizer and light irrigation.
- In the Hill Zone, carry out transplanting of cabbage and cauliflower crops and apply irrigation as per requirement. Carry out harvesting of Mandarin orange. Continue regular harvesting of mature round chilli fruits. Do not apply irrigation to rice crop at dough stage.
- In the New Alluvial Zone, continue harvesting of Aman rice. Continue sowing of mustard, radish and broccoli.
- In Laterite and Red Soil Zone, complete harvesting of rice and keep rice bundles in a shade. Complete field preparation for wheat and potato.
- In the Terai Zone, in ginger, turmeric, cucurbits and legume vegetables, apply (Metalaxyl + Mencozeb) @ 2g/litre of water if there is yellowing of leaves or rotting of fruits or vines. Fruit fly in cucurbits may be managed initially by pheromone trap @ 2/ bigha. Avoid unnecessary application of toxic pesticides.
- **Andaman & Nicobar Islands**
- In the Andaman & Nicobar, dry the rice to safe moisture level (10 to 12 %) to avoid fungal diseases. Prepare the field for yearly sowing of cauliflower seeds @ 450 to 500 g/ha and apply farm yard manure during last ploughing.
- In North and Middle Andaman, provide support to the vine vegetables grown in bamboo structure as strong wind is expected. Avoid pesticide application during next five days and harvest the mature vegetables.
- In the Nicobar Islands, clean the drainage channels in vegetable field to remove excess rain water.
- **Animal Husbandry**
- In the Old Alluvial Zone, keep the animals in a covered shed/area during the night. Feed clean and hygienic water to dairy animals.
- In the Hill Zone, vaccinate poultry birds with Ranikhet disease vaccine at 5-7 days and booster RD Lasota at 2^{8th} day.
- In the Andaman and Nicobar Islands, Clean the poultry sheds with disinfection solution like savlon and water, spray lime surrounding area of poultry farm to avoid disease.
- **Fisheries**
- In the Old Alluvial Zone, apply Rice bran & Mustered oil cake (1:1) @ 3-2% of the total body weight of fish finger stocked in the pond as a supplementary feed.

CENTRAL INDIA [M.P., CHHATTISGARH]

- **Realised Rainfall:** Weather remained dry over the region during the week.
- **Advisories:**
 - **Madhya Pradesh:**
 - In Central Narmada Valley Zone, continue sowing of chickpea, wheat, barley, mustard and alsin, planting of potato and garlic and harvesting/threshing of matured rice crop.
 - In Vindhya Plateau Zone, continue sowing of wheat, gram, lentil and coriander and planting of potato.
 - In Bundelkhand Zone, continue sowing of wheat, chickpea, mustard, pea, linseed, lentil, green vegetables (fenugreek, spinach, coriander) and turnip. Continue planting of potato and nursery preparation for onion. Continue mulching in newly planted mango and guava orchard and hoeing and weeding in fruit orchard basin.
 - In Nimar Valley Zone, continue nursery preparation for onion and select varieties GW-322, GW-366, HI-1544 for sowing of wheat.
 - In Malwa Plateau Zone, continue planting of potato.
 - In Jhabua Hill Zone, continue sowing of early maturing varieties (HI-1500, HI-1531, HW-2004, JWS-17) of wheat, vegetable crops like vegetable pea, fenugreek, spinach, radish and planting of onion.
 - In Gird Zone, continue planting of potato and sowing of chickpea and pea.
 - In Kymore Plateau and Satpura Hill Zone, continue transplanting of vegetables and sowing of mustard, lentil and garden pea.
 - **Chhattisgarh:**
 - In Chhattisgarh Plain Zone, continue sowing of chickpea crop, land preparation and sowing of moong, urad, sunflower and safflower etc. from 15th November. Complete nursery sowing of vegetable crops (cauliflower, cabbage and kholkhola early varieties).
 - In Bastar Plateau Zone, continue sowing of wheat, gram, pea, linseed and lentil crops and nursery preparation for *rabi* vegetables (cabbage, cauliflower, brinjal, tomato and chilly). Continue field preparation for planting of *rabi* colocasia and bunda.
 - In North Hill Zone, continue harvesting/threshing of matured rice. Continue sowing of mustard, green pea, gram and mustard. Continue transplanting of winter vegetables like cauliflower, cabbage, chilli, tomato, brinjal etc. Continue planting of potato and garlic and nursery sowing of onion.
 - **Animal Husbandry**
 - In Madhya Pradesh, vaccinate the poultry birds to prevent Ranikhet disease. Vaccinate the goat against PPR disease. Provide green fodder, fresh and clean water three times a day to cattle. Use malathion/Cleaner/Butox 2ml/litre of water on whole body of animals to prevent from the ticks and lice.

- In Chhattisgarh, low temperature condition may adversely affect the milk production and performance of domestic animals; give protein enriched diet to the animals. Keep animal indoor. Provide supplementary wormicide medicine in feed of poultry birds.

NORTH INDIA [JAMMU & KASHMIR, HIMACHAL PRADESH, UTTARAKHAND, PUNJAB, HARYANA, DELHI, UTTAR PRADESH & RAJASTHAN]

- **Realised Rainfall:** Weather remained dry over the region during the week.

- **Advisories:**

- As shallow to moderate fog at isolated places in the morning hours very likely over Punjab, northwest Haryana and north Rajasthan during next 3 days, monitor the standing crops for incidence and spread of pest diseases, tomato and onion crops for early/late blight disease. If symptoms are noticed, undertake plant protection measures.

- **Jammu & Kashmir:**

- In Sub Tropical Zone, undertake sowing of wheat (varieties : PBW-550, HD-2967 under irrigated conditions and var. viz. PBW-644, PBW-396 and WH-1080 after the receipt of rain under unirrigated/rainfed conditions) . Complete the sowing of pea (var., AP-1, Bonnevillea, Rachna and Arkel); chickpea (var., K-468, Gourav); lentil (var., L-4147, L-9/12, PL-406) after the receipt of rain . Raise nursery for onion crop (Pusa Red, Pb. Selection).

- In Rajouri, Ramban, Poonch and Udhampur districts of Intermediate Zone, make preparations for timely sowing of wheat crop. The fields that have been vacated are required to be ploughed and prepared for conservation of moisture to keep them ready for timely sowing of wheat crop. Field preparation should be done with care as conservation of moisture is dependent on it. Those farmers which prepared their crop fields and ready for sowing of wheat crop are advised to undertake sowing (var. VL 907, HS 507 and HPW 349) under irrigated/rainfed conditions up to 800 -1000 m amsl, variety PBW-175 up to 1000 m amsl under rainfed condition only and VL 804, HS 507 and HPW 349 under irrigated/rainfed conditions up to 1000 -1350 m amsl in Intermediate (mid to high altitude) areas of the district. Farmers are also advised to continue sowing of mustard (var. Kranti, RLM 619, Varuna and RH 30) and oats crop (var. Kent and Sabzar), sowing of gram (C-235, Gaurav, K-468, SCS-3 and PBG-1) and pea (var. T-163, PG-2 and Rachna) where adequate moisture is available for sowing. - Treat the seed with captan or thiram or Bavistin (2g/kg seed) for the management of collar/root rot, rust and wilt in chick pea. Inoculate with Rhizobium culture (200-250g/acre) before sowing.

- **Uttarakhand:**

- In Sub Humid Sub Tropic Zone, continue harvesting of maize. Undertake nursery sowing of tomato.
- In Bhabar and Tarai Zone, continue sowing of wheat and barley.

- **Punjab, Haryana and Delhi:**

- In Delhi, undertake sowing of wheat. (Varieties H.D. 2687, H.D. 2851, H.D. 2894, H.D. 2967, D.B.W.-17). Undertake sowing of lentil (varieties : Pusa Masoor -5 (L-4594) and pea (varieties: Pusa Pragati, Arkel, Azad Matar-3, Pant Matar-3, Bournville). Planting of potato should be done as soon as possible. (Varieties : Kufri Badshah (Late blight tolerant), Kufri Jyoti (Short duration), Kufri Alankar, Kufri Chandramukhi. Weather is suitable for transplanting of seedlings of cauliflower, cabbage; broccoli in raised bed.

- In Haryana, in Western Zone, as dry weather would prevail, continue picking of cotton. Continue sowing of mustard with varieties RH-30, RH-0749, RH-0406, Varuna, Laxmi etc if sufficient moisture is available in soil.

- In Western Plain Zone of Punjab, harvesting of paddy/basmati should be harvested as soon as they mature. Delayed harvesting may cause over-ripening and shattering. The harvested crop should be threshed on the same or next day of harvesting. Continue picking of cotton and harvesting of pulses. Undertake land preparation for sowing of wheat. Farmers are advised to procure the wheat varieties, namely, Unnat PBW 343, PBW 1 Zn (variety with high Zinc content), PBW 725, PBW 677, HD 3086, WH 1105, PBW 621, HD 2967 and durum wheat WHD 943 and PDW 291 for irrigated conditions and PBW 660 and PBW 644 for rainfed conditions. Complete sowing of root crop varieties of Punjab Pasand and Japanese white of radish, L-1 of turnip and Punjab Black Beauty, Punjab Carrot Red and PC-34 of carrot. Use 2 kg seed for turnip and 4 kg seed for carrot and radish per acre.

- **Himachal Pradesh:**

- In High Hill Temperate Dry Zone, continue harvesting of oats. Make beds in apple orchard.
- In Solan Shimla, Bilaspur and Sirmour districts of Mid Hills Sub Humid Zone, continue sowing of carrot, radish, spinach and turnip.

- **Uttar Pradesh:**

- In Central Plain Zone, continue sowing of wheat, gram, lentil and pea .
- In Kanpur district of Central Plain Zone, continue harvesting of matured rice. Continue sowing of winter vegetable like spinach, fenugreek, coriander, carrot, radish etc. continue sowing of mustard, gram, pea and planting of potato.
- In Bundelkhand Zone and Western Plain Zone, continue sowing of rabi maize, lentil, mustard, pea, gram and wheat and planting of potato.

- **Rajasthan:**

- In Irrigated North Western Plain Zone, continue sowing of wheat, gram, pea and lentil.
- In Flood Prone Eastern Plain Zone, undertake land preparation for sowing of wheat. Complete sowing of mustard at

the earliest.

- In Southeastern Humid Plain Zone, continue sowing of rabi maize.
- In Sub Humid Southern Plain and Aravali Hill Zone, in Bhilwara, Chittorgarh, Rajsamand, Sirohi and Udaipur districts, continue sowing of wheat and barley.
- In Arid Western Plain Zone, continue sowing of wheat and barley. There is chance of saw fly or painted bug in early sown mustard. Apply methyl Parathion 2% or Malathion 5% dust @ 24 kg/ha during morning or evening time and repeat after 15 days if required.
- **Animal Husbandry:**
 - In Arid Western Plain Zone of Rajasthan, vaccinate the livestock against foot and mouth disease and adopt protection measures against mastitis. Also make arrangements for protection of animals from winter.
 - In Bhabar and Tarai Zone of Uttar Pradesh, vaccination livestock against Foot and Mouth Disease.

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